

CLAIMS

What is claimed is:

1. A method, comprising:
 - enumerating a set of parameters;
 - providing an indication in a first set of arrays of whether to acquire from a first program portion an information associated with one or more parameters of the set of parameters, in response to a second program portion issuing a query to a third program portion for identifying the one or more parameters;
 - populating a second set of arrays in an image of the first set of arrays with the information received from the first program portion associated with the one or more parameters, in response to a request from the second program portion;
 - evaluating the third program portion by utilizing the information associated with the one or more parameters from the second set of arrays to derive an output from the third program portion for return to the second program portion; and
 - conveying the output from the second program portion to the first program portion.
2. The method of Claim 1, wherein providing the indication includes setting a respective flag to either a first value or a second value in the first set of arrays for each of the set of parameters by the third program portion.
3. The method of Claim 2, the first value indicating to the second program portion to seek the information associated with the one or more parameters, and the second value indicating to the second program portion not to seek the information associated with the one or more parameters.
4. The method of Claim 3, wherein populating with the information includes filling a value obtained from the first program portion in the second set of arrays corresponding to the

one or more parameters with their said flags having the first value.

5. The method of Claim 4, the value for each of the one or more parameters of the set of parameters is loaded in a location in the second set of arrays responsive to said query to third program portion for determining a type of data required at said location.

6. The method of Claim 1, wherein the first program portion includes an application program for electronic design automation.

7. The method of Claim 1, wherein the second program portion includes an operable interface to interact with the first program portion.

8. The method of Claim 1, wherein the third program portion includes a model having a plurality of rules for use with the first program portion.

9. The method of Claim 8, wherein the model includes one or more active models, each active model having a dataset and an algorithmic content.

10. The method of Claim 8, wherein the plurality of rules includes a plurality of non-application specific core algorithms, each non-application specific core algorithm having one or more application specific functions associated with the first program portion.

11. The method of Claim 10, wherein the plurality of rules includes an electrical characteristic rule to determine a performance metric of an under test circuit.

12. The method of Claim 1, wherein the first program portion communicates with the third program portion through the second program portion utilizing a parameter block interface.

13. The apparatus of Claim 12, wherein the parameter block interface is used to evaluate

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said one or more parameters either for a single element or for a plurality of elements.

14. The method of Claim 1, wherein the first program portion communicates with the second program portion utilizing one or more transactions, and the second program portion communicates with the third program portion through at least one query call and at least one evaluate call.

15. The method of Claim 14, wherein the second program portion communicates with the third program portion through one or more said query and evaluate calls in a shared workspace.

16. A method, comprising:

enumerating a parameter block having a first plurality of parameters for selectively filling a first data structure and a second data structure and a second plurality of parameters for selectively filling the first data structure and the second data structure, both the first data structure and the second data structure having an index order such that said second data structure is a mapped image of said first data structure, wherein both the first data structure and the second data structure includes a first plurality of arrays and a second plurality of arrays;

providing a first indication in the first plurality of arrays of said first data structure of whether to acquire from a first program portion a dataset associated with said first plurality of parameters, in response to one or more queries being issued from a second program portion to a third program portion for identifying the first plurality of parameters;

providing a second indication in the second plurality of arrays of said first data structure for identifying said second plurality of parameters to the second program portion, in response to receipt of said one or more queries at the third program portion;

populating the first plurality of arrays of said second data structure with the dataset, in response to one or more transactions performed between the first and second program portions;

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evaluating the third program portion by utilizing the dataset and the second indication to derive an output data from the third program portion for return to the second program portion;

populating the second plurality of arrays of said second data structure with the output data received from the third program portion; and

extracting the output data from the second plurality of arrays of said second data structure for return to the first program portion.

17. The method of Claim 16, wherein the first plurality of arrays of said first data structure includes one or more predetermined parameter types and the second plurality of arrays of said first data structure includes a result parameter type.

18. The method of Claim 16, wherein the first plurality of arrays of said second data structure includes one or more predetermined parameter values and the second plurality of arrays of said second data structure includes a result parameter value.

19. The method of Claim 16, wherein each of said first plurality of arrays of said first and second data structures having a first dimensionality determined dynamically, in response to the first plurality of parameters, and each of said second plurality of arrays of said first and second data structures having a second dimensionality determined dynamically, in response to the second plurality of parameters.

20. A method for evaluating a rule, comprising:

querying said rule to determine one or more requirements that need to be fulfilled by data such that said rule can be evaluated;

utilizing a parameter block interface having one or more fields for passing the data to the rule; and

filling the one or more fields of said parameter block interface dynamically responsive to the one or more requirements of said rule.

21. A system, comprising:
 - means for enumerating a set of parameters;
 - means for providing an indication in a first set of arrays of whether to acquire from a first program portion an information associated with one or more parameters of the set of parameters, in response to a second program portion issuing a query to a third program portion for identifying the one or more parameters;
 - means for populating a second set of arrays in an image of the first set of arrays with the information received from the first program portion associated with the one or more parameters, in response to a request from the second program portion;
 - means for evaluating the third program portion by utilizing the information associated with the one or more parameters from the second set of arrays to derive an output from the third program portion for return to the second program portion; and
 - means for conveying the output from the second program portion to the first program portion.
22. An electronic media, comprising a program for performing the method of Claim 1.
23. A computer program, comprising computer or machine-readable program elements translatable for implementing the method of Claim 1.
24. The method of Claim 1, further comprising verifying a design of an integrated circuit.
25. An integrated circuit designed in accordance with the method of Claim 1.
26. A computer program comprising computer program means adapted to perform the steps of enumerating a set of parameters; providing an indication in a first set of arrays of whether to acquire from a first program portion an information associated with one or more parameters of the set of parameters, in response to a second program portion issuing a query to

a third program portion for identifying the one or more parameters; populating a second set of arrays in an image of the first set of arrays with the information received from the first program portion associated with the one or more parameters, in response to a request from the second program portion; evaluating the third program portion by utilizing the information associated with the one or more parameters from the second set of arrays to derive an output from the third program portion for return to the second program portion; and conveying the output from the second program portion to the first program portion when said first program portion, said second program portion, and said third program portion are run on a computer.

27. A computer program as claimed in Claim 26, embodied on a computer-readable medium.

2 28. An electronic media, comprising a program for performing the method of Claim 16.

3 29. A computer program, comprising computer or machine-readable program elements translatable for implementing the method of Claim 16.

① 30. The method of Claim 16, further comprising verifying a design of an integrated circuit.

④ 31. An integrated circuit designed in accordance with the method of Claim 16.

③ 32. A computer program comprising computer program means adapted to perform the steps of enumerating a parameter block having a first plurality of parameters for selectively filling a first data structure and a second data structure and a second plurality of parameters for selectively filling the first data structure and the second data structure, both the first data structure and the second data structure having an index order such that said first data structure is a mapped image of said second data structure, wherein both the first data structure and the second data structure includes a first plurality of arrays and a second plurality of arrays; providing a first indication in the first plurality of arrays of said first data structure of whether

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to acquire from a first program portion a dataset associated with said first plurality of parameters, in response to one or more queries being issued from a second program portion to a third program portion for identifying the first plurality of parameters; providing a second indication in the second plurality of arrays of said first data structure for identifying said second plurality of parameters to the second program portion, in response to receipt of said one or more queries at the third program portion; populating the first plurality of arrays of said second data structure with the dataset, in response to one or more transactions performed between the first and second program portions; evaluating the third program portion by utilizing the dataset and the second indication to derive an output data from the third program portion for return to the second program portion; populating the second plurality of arrays of said second data structure with the output data received from the third program portion; and extracting the output data from the second plurality of arrays of said second data structure for return to the first program portion when said first program portion, said second program portion, and said third program portion are run on a computer.

- 33. A computer program as claimed in Claim 32, embodied on a computer-readable medium.
- 34. A computer program as claimed in Claim 20, embodied on a computer-readable medium.
- 35. An electronic media, comprising a program for performing the method of Claim 20.
- 36. A computer program, comprising computer or machine-readable program elements translatable for implementing the method of Claim 20.
- 37. The method of Claim 20, further comprising verifying a design of an integrated circuit.
- 38. An integrated circuit designed in accordance with the method of Claim 20.

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3 39. A computer program comprising computer program means adapted to perform for evaluating a rule the steps of querying said rule to determine one or more requirements that need to be fulfilled by data such that said rule can be evaluated; utilizing a parameter block interface having one or more fields for passing the data to the rule; and filling the one or more fields of said parameter block interface dynamically responsive to the one or more requirements of said rule when said rule is run on a computer.

3 40. A computer program as claimed in Claim 39, embodied on a computer-readable medium.

2 41. An apparatus for evaluating a rule, comprising:
an interrogator for querying said rule to determine one or more requirements including parameters that need to be fulfilled by data such that said rule can be evaluated;
a parameter block interface having one or more fields for passing the data to the rule;
and
an evaluator for dynamically filling the one or more fields of said parameter block interface responsive to the one or more requirements determined from said rule.

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